

Detector magnetic DM-21xC , Sensor for measurement of vehicle presence (DM-211C) to be installed into the surface layer of the pavement. The detection principle is based on continuous measurement of geomagnetic field.

The same hardware as DM-211C , with firmware upgrade could be used as well for traffic census – type DM-216C. To measure speed and length of the vehicle the two detectors units DM-216C in a row needs to be installed (4m distance between sensors is recommended).

Technical parameters:

Installation: intrusive, by pavement drilling, 100 mm in diameter

Lifetime: guaranteed 10 years (projected 15 years) - measurement of vehicle presence
guaranteed 3 years - traffic census

Power supply: battery, lithium-thionyl chlorid (Li-SOCI₂)

Communication: RF 868/916 Mhz (conforming to VO-R/10/09.2010-11); SIGFOX ready

Operation temperature: -40 °C / +85 °C

Dimensions: diameter 97 mm, height 200 mm

Weight: max. 1 kg

Coating: material ABS, IP68, black



Detector DM-21xC

Collector MASTER CM 121x,

Data collector and control unit for management of communication among installed components of the parking system. It transfers real time data for further processing (export in DATEX II, remote control). The recommended number of managed detectors is up to 200.

Technical parameters:

Installation: on a pole/post

Power supply: accumulator

Recharging variants: photovoltaic panel (50W), public lights supply

Communication: RF 868/916 Mhz (conforming to VO-R/10/09.2010-11), 3G/EDGE/GPRS

Operation temperature: -40 °C / +55 °C

Dimensions: 300 x 220 x 120 mm

Weight: max. 3 kg (without accumulator, without photovoltaic panel)



Master SOLAR - CM 1212 (60 W PV panel, 33Ah aku)

Master VO (Street lamp charge)

IP: IP56
Operating temperature : -25 ° C to + 55 ° C
Dimensions : 300 x 400 x 160 mm (W x H x D) , without antennas
Weight: 20 kg max

Charger :
DC charging current : 1.6 A max
Charging voltage DC : max . 14.4 V temperature compensated

Battery: Lead
DC Nominal voltage : 12V
Nominal capacity: 20Ah at 25 ° C
Type: FG12200 , FG - FORTE

Power supply:
Rated voltage : AC 230 V / 50 Hz
Rated current: AC 30 mA (battery charge)

Power supply terminal block :

contact	marking	description
1	L	phase conductor
2	N	neutral conductor
3	PE	protective earthing conductor

Other parameters are the same parameters MASTER SOLAR .

Master SOLAR

Parametry:

IP: IP56
Operating temperature: -25 ° C to + 55 ° C
humidity: max 95% at 25 ° C, noncondensing
Dimensions: 300 x 400 x 200 mm (W x H x D), without antennas
Weight: max 30 kg (including Battery and 60W photovoltaic panel)

Charger: Charging circuitry ensures UC2906DW
Charging current DC: max. 3 A
Charging voltage DC: max. 14.4 V temperature compensated
Energy monitoring: INA219BIDCNT, connected to the I2C
storing the battery information in memory FRAM

Battery protection:
isolation voltage: DC 10.6 V +/- 2% (deep discharge protection)
DC supply voltage: 12.0 V +/- 2% (load reconnection after partial charge)
Fuse: 4A, Polyswitch resettable fuse

Battery: Pb, maintenance-free
DC Nominla voltage: 12V
Nominal capacity: 33Ah at 25 ° C
Type: 6FG33, FG-FORTE

Lithium battery backup time clock (RTC):
DC Rated voltage: 3V
Type: CR2032

Connectivity:
3G GSM modem: QUECTEL U10 is connected to the USB
or
2G GSM modem. QUECTEL M95, connected via USB FT2321R
on / off Modem: using the pin GPIO17 at RPI

Modem is part of the RTC circuit

Connector for SIM card: ATTEND, 115A-R02-ADA0

COM port RS 232: CANNON 9 male

pin	marking	description
1	NC	not connected
2	Rx	receive data
3	Tx	transmit data
4	NC	not connected
5	GND	ground
6	NC	not connected
7	-5 V	voltage -5 V, max -1 mA
8	+5 V	voltage +5 V, max 1 mA
9	+5 V	voltage +5 V, max 10 mA

Connektor SIM for HF module IQRF: ATTEND 115C-BC00-R

pin	marking	description
C1	PWM_IN	IN, connected to RPi GPIO18
C2	C2_TR	IN/OUT, connected to RPi GPIO21
C3	3V	supply 3V, drive by RPi GPIO22, log 1 = ON, log 0 = OFF
C4	GND	ground supply
C5	/SS0	SPI signal, connected to RPi /SS0
C6	SCK	SPI signal, connected to RPi /SCK
C7	SDI	SPI signal, connected to RPi SDI
C8	SDO	SPI signal, connected to RPi SDO

Hardware WATCHDOG

Activated by jumper

Connected to the RPI GPIO4 , default set-up LOG I

The setting is done by pulse LOG 0 , length 0.5 sec. , every 120 sec., otherwise after about 360 sec. the power supply is disconnected for about 15 seconds.

Antenna :

Antenna for GSM : 2G , 3G , 2 dBi

Antenna for IQRF : patch antenna , RHCP , 3 dBi , manually swiveling bracket

Power supply:

Nominal voltage : 17V DC, 17V AC

Nominal current : 250 mA (if battery charged)

Power supply terminal block:

contact	marking	description
1	AC1	PV panel + pole
2	AC2	NC
3	0 V	PV panel – pole
4	+ A	accumulator + pole
5	- A	accumulator - pole

System connector :

It is designed to connect to the RASPBERRY Pi (RPI) .

In total connector has 26 contacts and connections to the RPI is carried out by IDC flat cable.

RPI is charged through this connector via 1A fuse.

Collector SLAVE CS 126xF

RF signal repeater. It provides the data transfer from detectors. It guarantees the coverage of RF signal by using its technology of wireless MESH network. It is an auxiliary component for bigger installations – the recommended number of managed detectors is up to 50.

Technical parameters:

Installation: on a pole (CS 1262F) / cartridge into eg. traffic sign pole (CS 1264F)

Power supply: accumulator

Recharging variants: photovoltaic panel (5W), public lights supply

Communication: RF 868/916 Mhz (conforming to VO-R/10/09.2010-11), 3G/EDGE/GPRS

Operation temperature: -40 °C / +55 °C

Dimensions: 240 x 190 x 90 mm

Weight: max. 3 kg (without photovoltaic panel)



Slave - CS 1264F



Slave – CS 1262F